

Remarks

The Examiner has objected to informalities in Fig. 5. A replacement Fig. 5 has been submitted herein. Spellings have been corrected and no new matter has been added in the replacement Fig. 5.

The Examiner has objected to the reference to a related application by using an attorney's docket number instead of an application serial number. The specification has been amended to correct for this.

The Examiner has objected to informalities in claims 1 and 8. The amendments have corrected these.

The Examiner has rejected claims 1-7 under 35 USC 102(b) as being anticipated by Tchernev (US 4,208,911). Tchernev has disclosed the use of ferrimagnetic ferrites in an electronic temperature measuring apparatus. The ferrites disclosed by Tchernev are formed by mixing powders of NiO, Fe₂O₃, and ZnO. The mixtures then require specialized handling and procedures during sintering and annealing operations. The use of ferrite materials exhibiting ferrimagnetism are difficult to use for Curie point standards. It is a difficult task to prepare samples with precisely predictable properties. Even Tchernev admits this: "...it is not practical at present to produce a mixture which will result in the exact desired transition temperature..." (Col 2, line 28). This difficulty with ferrites is well known in the art. For example:

"The preparation of polycrystalline ferrites with optimum properties is considered to be difficult and complex. The main problems involved are due to the fact that most of the properties needed for ferrite applications are not intrinsic

but extrinsic. That is, the ferrite is not completely defined by its chemistry and crystal structure but also requires knowledge and control of the parameters of its microstructures, such as density, grain size, and porosity and the intra- and inter-granular distribution". (P. I. Slick, "Ferrites for non-microwave applications", in Ferro-Magnetic Materials, 1980).

By contrast, the present invention provides for ferromagnetic slugs which are fabricated principally by melting two metals. The composition of each final slug is easy to control. Furthermore the property of each final slug depends much less on extrinsic factors. Accordingly, the ferromagnetic slugs provided by the present invention represent a considerable improvement. Claim 1 has also been amended to recite the novel slugs specifically for VTGA calibration.

The Examiner has rejected claims 8-10 under 35 USC 103(a) as being unpatentable over Tchernev. As discussed above, the ferrite materials disclosed by Tchernev are difficult to prepare and unpredictable compared with the ferromagnetic slugs provided by the present invention. Slugs provided by the present invention are basically prepared by melting together two samples of metal. The final composition is easy to predict and the properties of the slugs are much more predictable compared to the ferrite materials disclosed by Tchernev. Accordingly, the slugs provided by the present invention would not have been obvious based on the teaching of Tchernev. Claim 8 has been amended to recite the novel slugs specifically for VTGA calibration.

Applicant admits the previous use of Monel, a NiCu alloy with about 28-30% of Cu as a previously known, single Curie point standard. The present invention provides a series of standards which span a range of relatively low temperatures. These standards provide a much more useful calibration of VTGAs.

Applicants respectfully request reconsideration of the present application.

Respectfully submitted,

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In the Drawings:

Please replace Fig. 5 with the replacement version of Fig. 5 enclosed herein. The amended version of Fig. 5 corrects misspellings and adds no new matter.